DOCUMENT RESUME

ED 281 140 CS 008 714

AUTHOR Tierney, Robert J.; Pearson, P. David
TITLE Schema Theory and Implications for Teaching Reading: A Conversation. Reading Education Report No. 67.
INSTITUTION Bolt, Beranek and Newman, Inc., Cambridge, Mass.; Illinois Univ., Urbana. Center for the Study of Reading.
SPONS AGENCY National Inst. of Education (ED), Washington, DC.
PUB DATE Jun 86
CONTRACT 400-81-0030
NOTE 19p.
PUB TYPE Information Analyses (070) -- Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Elementary Education; Opinions; Prior Learning; *Reader Text Relationship; *Reading Comprehension; *Reading Instruction; Reading Processes; *Reading Research; *Research Utilization; *Schemata (Cognition); Theories

ABSTRACT

Research discoveries over the past 15 years concerning reading comprehension have had a significant impact on reading instruction, particularly schema theory. This theory, based on prior learning, which states that the reader uses the text to construct a meaning within his or her own mind, affects what teachers can do to help students improve comprehension. A conceptual rather than a definitional or contextual approach should be used to teach vocabulary, because it shows students how particular vocabulary items relate to other concepts they already know. Further, teachers should encourage students' initiative in reading, and encourage them to pause and think while reading. In this way, teachers can help children select schemata for understanding a new selection. Schema theory also affects the ways teachers can help children extend beyond the text and interact with it at more complex levels, by emphasizing the importance of helping students get background knowledge and of respecting the reader's role in creating meaning. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED281140

CENTER FOR THE STUDY OF READING

Reading Education Report No. 67

SCHEMA THEORY AND IMPLICATIONS FOR TEACHING READING: A CONVERSATION

Robert J. Tierney

Ohio State University at Columbus

P. David Pearson

University of Illinois at Urbana-Champaign

June 1986

University of Illinois
at Urbana-Champaign
51 Gerty Drive
Champaign, Illinois 61820

Bolt Beranek and Newman Inc.
10 Moulton Street
Cambridge, Massachusetts 02238

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

The work upon which this publication was based was performed pursuant to Contract No. 400-81-0030 of the National Institute of Education. It does not, however, necessarily reflect the views of the agency.

CS 008 714

Abstract

Two scientists, studying how reading can best be taught, discuss the major changes in what researchers have discovered about reading comprehension. They talk of schema theory which states that the reader uses the text to construct a meaning within his or her own mind. They analyze what teachers can do to help students understand what they read and to comprehend more. The scientists stress the importance of helping students get background knowledge, and conclude that the reader's role in creating meaning must be treated with respect.

Schema Theory and Implications for Teaching Reading:

A Conversation

David: In the last 15 years our thinking about reading comprehension has changed dramatically. People now believe that through instruction you actually can develop or improve a person's reading comprehension abilities; formerly, we believed that reading comprehension was something that could only be fostered through nurturing. Rob, what do you see as the major changes in our views about reading and reading comprehension, from a theoretical perspective, to bring us to this new belief?

Rob: The major influence stems from schema theory; new views have forced us to rethink the act of reading. For a long time we thought reading was the reproduction of the ideas on the page; our goal was to have students produce a "photocopy" of the page. Schema theory has moved us away from a reproductive view to a constructive view. In that view, the reader, rather than the text, moves to the center of the construction process. The reader, like an architect or a builder, uses the text as a blueprint as he or she creates meaning. In the reading situation the reader approaches the text with certain expectations of what he's about to read. It is like channel switching on a TV set. When you turn to a channel, you very quickly develop some expectations about what you're going to see. If you get a glimpse of an advertisement, you quickly select your advertisement schema (all your previous

knowledge about advertisements). If you switch to a sporting event, you quickly generate some expectations about what the sporting event is that you're viewing, or if it's a movie you might watch it for a few minutes to get a sense of whether you could get into this movie.

David: Let me just stop you there Rob. With your analogy of flipping TV channels, you're saying that the first job of a reader is to use prior knowledge to make a decision about whether or not to continue reading.

Rob: You make a decision as to whether you're going to make a commitment to the construction of meaning. Then you go through a process of refinement where you actually begin to specify for yourself how the parts and the whole of the text fit together.

David: Yeah. Rob, say something to clarify a thought that often lurks in people's minds when we talk about reader-based comprehension. Some people think we want to throw the text out the window in comprehension.

Rob: First I'd like to emphasize the concept that the text that is being constructed is not on the page but in the reader's head, which is a very important point for teachers to realize when they interact with their students. Second, I think teachers often spend too much time stuck in the text on the page (which is a major resource used to construct the text in the head), rather than really probing and exploring and encouraging the students to construct a text of their own. The focus of

teacher guidance should actually be more on the students' ideas. That doesn't dismiss the text, because as I've suggested the text is a resource. It just means that teachers need to shift their focus from the page to their students' minds, which is, after all, where comprehension takes place.

David: So Rob, I'm just trying to understand everything you said here. Here is what I think you said; you tell me whether or not I'm on the right track. The text, instead of being a thing to be learned, is a resource used to construct meaning. And comprehension, instead of being a measure of the degree to which you can recall faithfully the message on the page, is really the reader's attempt to build a model of meaning within his or her own head. Finally, it's that text that every reader builds within his or her own head that is the basis upon which we say a reader has understood.

Rob: I couldn't have said it better myself. The only thing I'd add is the concept that every text has many "potential" meanings.

David: And that one of the teacher's major jobs is to help students realize those potential meanings.

Rob: That's right. Now let's talk about how to do that when a teacher is working with texts that she wants her students to understand.

David: OK. Then let's just talk about what we usually do before kids read. Typically, we do three kinds of things that go on before reading: building background knowledge, vocabulary instruction, and setting purposes for reading. I guess I think that one of the things that schema theory suggests to us about building background knowledge is that we're going to have to spend a lot more time worrying about it than we typically have in the past. I think it's interesting that in Dolores Durkin's research about how teachers use basal readers, she found that building background was the least used section of the manuals. One of the clear implications of schema theory is that that is a mistake. That three minutes or five minutes, or whatever it takes, to make sure that your students are selecting appropriate schemata is worth every second. And by the way, and this is based on my own experience in working with kids, I often find that that five minutes or ten minutes that you spend building background knowledge, if it is done well, saves another five or ten minutes at the end when you're discussing the selection, because the post-reading discussion goes so much more smoothly and efficiently--it's more focused.

Rob: David, can you give me some sense of what you see as appropriate ways by which teachers can build background knowledge?

David: The other day I was working with a group of sixth grade kids and we were going to read an interview with the author Mary Cunningham. I began the building background selection with a simple question, "If you were going to interview an author, what things would you want to learn from that author?" We held a five to seven minute discussion on all the things that we would want to know, and we made a list on the chalkboard. That was interesting because once we made our list, our purpose for reading was clearly set: We wanted to compare our requests with the questions the interviewer really asked Mary Cunningham. By the way, that was exactly what our post-reading discussion focused on--a comparison of what the author asked with what we wanted to know.

Rob: A number of basals, a number of reading programs, a number of teachers, really urge the development of vocabulary along with the background knowledge of purpose setting. How does vocabulary fit in to what you're talking about, David?

David: Well, I think the clear implication of schema theory, and by the way we didn't need schema theory to tell us this, our common sense should have told us this, is that it's inappropriate to deal with vocabulary as a list of separate items, each of which has a definition and, if you are lucky, maybe a context sentence. So, to me, what schema theory says is that definitional approaches and even contextual approaches to learning vocabulary don't

really make it, that the whole point about vocabulary is to help kids learn how concepts are like and different from one another. In order to do that you have to use what most people call a conceptual approach in introducing new vocabulary items. What we should be helping kids see is how any particular vocabulary item relates to, is similar to, and is different from other concepts that they may already know about. So to me what schema theory says is that the wrong question to ask is, "What is it that the kid doesn't know, and how can I get that into his head?" Instead, the right question to ask is, "What is it that the kid does know, and how can I use that existing knowledge as a foundation to help the kid grapple with new concepts that he will encounter?"

Rob: How does vocabulary fit in with building background and setting purpose?

David: In any good lesson, they all merge together as teachers try to meet the goal of helping kids select schemata for understanding a new selection. Now it's your turn, Rob. How about during reading activities?

Rob: My goal is to get students to be fairly self-initiating in a way which is compatible with what we know successful readers do. We know, for example, that successful readers aren't necessarily people who whiz through a selection, reading it once as quickly as possible. Successful readers are readers who pause, think about why

they are reading, alter their purposes for reading, and maybe even recycle through a text.

David: You mean actually re-read it?

Rob: Actually re-read it. You know one of the things that we've talked about in the past, David, is the extent to which we get very frustrated with the mentality that successful readers are speed readers, when both of us realize that successful reading probably implies more reflective reading: the willingness to pause and reflect, the willingness to go back into a text and revisit from a different perspective.

You know Russell Stauffer developed a technique which he called the directed reading thinking. In one sense Russell Stauffer foreshadowed our thinking. Basically he said that children should make predictions, which become purposes for reading, read to verify those predictions, modify those predictions, and make new predictions. He developed a technique that comes as close as any I know to using the dynamic notion we've talked about to build a model of meaning for a text. Harold Herber says that the child's answers should be more important than the teacher's questions--that, in essence, captures the flavor of what schema theory is all about. When you're guiding a child through a text, you should be aware that what you're trying to help that child do is to construct that text for himself. We not only have to respect the child's interpretation, but also help the child build

that interpretation for himself. All this has some huge implications for the way we go about questioning students.

David: Rob, can I just stop you there and ask, Do you think that in the guided reading lesson, the parts where you have those page-by-page questions, that things are too much under the teacher's control, so much so that kids never get a chance to accept the responsibility for making predictions, setting purposes, or asking questions for themselves?

Rob: Yes, I believe it's the case. The typical scenario, and the typical way I used to guide the reading of a selection, is basically to set as my agenda a set of questions which I developed. That was the script that I imposed upon the students. My approach now would be quite different. Now, I would continually be trying to encourage them to develop a sense of the scenario, what the thing was all about, and I would be encouraging the children to refine the scenario as they gathered more information.

David: Sort of successive revision or refinement along the way?

Rob: That's right. But furthermore, one of the other things that I would try is to get that child to set his own purposes, set his own questions, to think about what he wants to know, to think about what he has learned, and whether he achieved the purposes he set for himself.

David: Well, let me ask you another question about what happens during reading activities. Do you think you can get kids to ask their own questions during reading?

Rob: Yes, there are plenty of ways. I think what you actually did with the Mary Cunningham interview was tantamount to that; you basically got the children to ask themselves what questions would you ask an author if you could, and there was a sense in which you basically got them involved in a sort of self-questioning which was directed at them dealing with a text in that way.

David: Rob, does anything go in these activities? Or, are the students accountable in the sense that they have to justify their interpretations and scenarios?

Rob: Justification is an interesting point. The research on teachers' questions, the kind of research that Guszak and Durkin did, basically suggests that as teachers we don't emphasize justification very much at all. We get a response from students and we move them on to a new question.

David: Well it's either right or it isn't right and if the kid doesn't get the right answer, the teacher asks somebody else.

Rob: To justify, we may find more teachers encouraging students to go back and show that part of the selection that proves their point. They may ask a student to explain "How does your point relate to . . . ?" "Well, can you explain

it further?" or, "I'm not really sure I understand your point, explain it!"

David: Or it could be, "Johnny said X and you said Y. Can you both be right?"

Rob: That's right. And part of the justification that I think you've got to be careful of, part of the attitude to justification, needs to be considered. Our attitudes as teachers should be one of sharing in the learning with the students, rather than giving the impression that, "Well, I'm waiting to see if you discover what I already know."

David: So does that mean that you think it's OK for a teacher to share with students the processes they go through in making predictions, asking and answering questions, or providing justification?

Rob: Sure, sharing their own successes, failures and frustrations is very important. After all, teachers are readers, too.

David: Let's move now to post-reading. When we talk about post-reading the biggest thing we talk about is questions, what our colleague Dolores Durkin calls assessment. I think her characterization was a set of low-level questions in search of single correct answers. I often, as I travel 'round, do certain demonstrations with kids, and one of the things that always amazes me is the degree to which children perceive the post-reading discussion as a sort of a quiz of how much they remember from the text.

Ironically, a lot of them don't even feel it's OK to look back at the text, to use the text as a resource for finding information; they think they're supposed to have read it once and then somehow magically to have remembered all the information. So, my point of view, related to schema theory, is that questions are not quizzes; rather, they're a device for building two kinds of key connections. One kind of connection is between key ideas that are in the text that they build. We should ask questions to help students see why what happened in the latter part of the story is influenced by what happened in an earlier part of the story. A second, and in some ways I think more important, kind of connection is between things that were in this text and ideas that they may have encountered in other texts or in their own experience. I really am a fan of those questions which invite children to deal with traits of a character in this particular story compared to traits that characters in other stories have. One of my favorite questions is, "Now remember the last story we read was about Elizabeth Ann; well she was a different character from Andrew. My question to you is, if Elizabeth Ann had had Andrew's problem, how would she have dealt with it, what would she have done differently from Andrew?" That question invites children to deal with the relationship between character traits and actions. That is a very important thing to learn about

stories: Characters do things on the basis of what kind of people they are and what kinds of experiences they've had.

Rob: The way I like to get these kids to extend beyond the text relates to one of the examples you offered--to get them to consider what would happen if something changed or get them to consider adopting the role of one of the characters. In that way I find that sort of opens the door for them to actually get in and begin to go beyond the text, but also to use the ideas within the text.

David: Sure, it's almost like a puzzle if you will, and if you change one piece in the puzzle then the whole puzzle changes.

Rob: That's right.

David: Rob, talk about how writing fits into this picture.

Rob: One of the most exciting developments that I think has occurred in reading in this country, is the introduction of writing into the reading curriculum.

David: I take it you mean more than writing answers to questions.

Rob: Right. What I see as the function in writing in the reading program is, above all, that it really does a wonderful service of grounding what is going to go on in the reading lesson in the children's ideas. Giving children a chance to write their own stories, either before or after they read a story, gives them a basis for

comparison, for looking at what an author has done and comparing it with what they have done.

David: Well, related to what I just said, remember, talking about building connections between this text and other texts, then there's no reason why the other text couldn't be something the children have written.

Rob: For example, you can get them to use the text as a resource. As they're writing the setting, you can say, "Well, OK, in your piece you described the setting in these terms--how did the author describe the setting?" When the child is looking for a word, you can say, "Well why don't you go back and check how the author spelled that word?"; "Why don't you go back and check how the author developed that character"; "Why don't you go back and see how the author created problems for the reader."

David: Now Rob, can I just stop you there? One of the real problems I think we have in post-reading questions, is trying to find good questions that focus on the author's craft. It seems to me that having children write in response to, or in relation to, a story they've read, is a very natural entree into dealing with the whole issue of author's craft--how authors deal with problems of creating settings, characters, or plot structures.

Rob: Further, I believe that giving the child an opportunity to write about the same topics that he reads about actually prepares the child to read more critically.

David: I think that post-reading activities ought to help kids go back to the text and invite them to change their perspectives.

Rob: Yes, I agree. I think one of the important things that kids do in reading a selection through, is that they typically are reading from one perspective. Sometimes they'll vary the perspective, but let's say if they are reading Charlotte's Web, they might identify with Wilbur, and as a result of that, may be imagining what's going on inside Wilbur. But they might miss some of the subtleties of what E. B. White is doing through Charlotte. For example, if they had an opportunity to reread from Charlotte's perspective, imagining they are Charlotte, they might start to pick up the foreshadowing that Charlotte tries to give Wilbur of his death. I don't think you can do all of that just with a single reading and so I think that the nice thing about rereading a text is that it opens up so many more potentials.

David: Yes. One of the things I talk about a lot with teachers is the notion that I call second pass. A good text is so rich with possibilities that it's almost impossible to see all of them in a single pass through a selection. Going back, remember the example I talked about earlier with the interview with Mary Cunningham. I said, OK, let's go back and look for advice that Mary Cunningham offers to other authors about how to write stories. We focused

upon very different features of the text. I asked them to get in pairs and triads and to compare the advice that they had come up with. Then after they had finished that--it really only took four or five minutes--we built a group list. Then when we got to the next selection, which was a story by Mary Cunningham, we could read it to see if Cunningham took her own advice when she wrote the story.

Rob: That's a wonderful example. Unfortunately, I think it's time to close, David.

David: Do you have any closing comments you want to make about schema theory and its implications for teaching reading?

Rob: Yes. I think that one of the key implications that we've been talking about is the fact that schema theory emphasizes the importance and need to respect the child's interpretation. Sometimes I think we should treat the child's interpretation with the same respect that we have for a letter we received from a close friend. I would respond to that letter in a way which is sincere, which reflects our perspective. I might deal with some of the questions that that person asked in that letter; at the same time, I may ask other questions. I might share my own perspective on events and some new perspectives on things that may have arisen in our shared experience. I think schema theory gives us a real sense of the need to respect more clearly the reader's role in the creation of meaning.

David: Yes, my way of saying that is, what schema theory ought to do for us as teachers is to make us realize that our role is not to be the source of wisdom and truth, imparting knowledge to children. Instead our role is more like a tour guide; and as a tour guide, our responsibility is to help kids develop strategies for discovering truth and wisdom on their own.